

AMENDMENT UNDER 37 C.F.R. § 1.111
SERIAL NO. 09/756,881
ATTORNEY DOCKET NO. Q62603

IN THE CLAIMS:

This set of claims is a clean set of pending claims 1-14 (with new claims 15-20 appearing afterward), consolidating any previous versions of pending claims into this single clean version, with changes made in this response being shown in the Appendix.

1. A recording apparatus comprising:

dot formation means being divided into a plurality of groups, each of the groups for forming a dot in accordance with a predetermined dot formation condition assigned thereto, the dot formation condition related to monochrome recording or color recording;

drive means for driving the respective groups in the dot formation means in accordance with record data;

control means for expanding record information into an image in storage means and for transferring record data from the storage means to the drive means;

fixing signal output means for outputting a mode fixing signal determining whether the dot is formed or not, and for transmitting the mode fixing signal to the drive means associated with a group in the dot formation means in which whether the dot is formed or not is predetermined as the dot formation condition, instead of the record data;

mode fixing means for fixing the dot formation condition of the group in the dot formation means, to which the mode fixing signal is transmitted, as determined by the mode fixing signal.

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2. The recording apparatus as set forth in claim 1, wherein the fixing signal output means outputs the mode fixing signal determining that the dot is not formed to the drive means associated with a group of the dot formation means which is not used for recording; and wherein the mode fixing means fixes the dot formation condition of the group so as not to form the dot.

3. (Once Amended) The recording apparatus as set forth in claim 1, wherein the storage means is provided with storage regions enough for a maximum number of groups of the dot formation means which are used at the same time; and wherein the control means reserves storage regions in the storage means enough for groups used on a present recording.

4. (Once Amended) The recording apparatus as set forth in claim 1, wherein the storage means is provided with storage regions only enough for a maximum number of groups of the dot formation means which are used at the same time.

5. The recording apparatus as set forth in claim 4, wherein the fixing signal output means outputs the mode fixing signal determining that the dot is formed to all the groups in the dot formation means when the predetermined conditions of the respective groups are determined so as to form the dot.

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6. (Once Amended) The recording apparatus as set forth in claim 1, wherein when an excess storage region occurs in the storage means in accordance with unnecessary of the record data transmission due to the mode fixing signal output, the control means utilizes the excess storage region for a serial transmission of the record data.
7. (Once Amended) The recording apparatus as set forth in claim 1, wherein when an excess storage region occurs in the storage means in accordance with unnecessary of the record data transmission due to the mode fixing signal output, the control means utilizes the excess storage region for another data processing.
8. The recording apparatus as set forth in claim 2, wherein the divided groups of the dot formation means includes a color group for forming a plurality colors of dots, a first black group for forming a black dot on monochrome recording and a second black group for forming a black dot on the monochrome recording and the color recording; and wherein the fixing signal output means outputs the mode fixing signal to the first black group on the color recording, and outputs the mode fixing signal to the color group on the monochrome recording.
9. The recording apparatus as set forth in claim 1, wherein the fixing signal output means outputs the mode fixing signal determining that dot is formed to all the groups in the dot formation means; and
wherein the mode fixing means fixes the respective dot formation conditions of all the groups so as to form the dot.

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10. The recording apparatus as set forth in claim 1, wherein the drive signal is provided with a shift register for parallel-converting the record data which is serial-transmitted; and wherein the mode fixing means is provided on a signal transmission path arranged between the shift register and the dot formation means.

11. The recording apparatus as set forth in claim 1, wherein the drive signal is provided with a shift register for parallel-converting the record data which is serial-transmitted; and wherein the mode fixing means keeps data determined by the mode fixing signal in the shift register.

12. A method of controlling data, comprising the steps of:
providing a recording apparatus comprising dot formation means being divided into a plurality of groups, each of the groups for forming a dot in accordance with a predetermined dot formation condition assigned thereto, the dot formation condition related to monochrome recording or color recording; drive means for driving the respective groups in the dot formation means in accordance with record data; and control means for expanding record information into an image in storage means and for transferring record data from the storage means to the drive means;

judging whether there is a group of the dot formation means in which whether the dot is formed or not is predetermined as the predetermined dot formation condition, when the record data is expanded in the storage means and is transmitted from the storage means to the drive means;

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outputting a mode fixing signal determining whether the dot is formed or not, and transmitting the mode fixing signal to the drive means associated with the group in which whether the dot is formed or not is predetermined, instead of the record data; and fixing the dot formation condition of the group in the dot formation means, to which the mode fixing signal is transmitted, as determined by the mode fixing signal.

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13. The data controlling method as set forth in claim 12, wherein the mode fixing signal determining that the dot is not formed is output to the drive means associated with a group of the dot formation means which is not used for recording such that the dot formation condition of the group is fixed so as not to form the dot.

14. The data controlling method as set forth in claim 12, further comprising the step of reserving a storage region in the storage means associated only with a group to which the mode fixing signal is not transmitted.

Please add the following new claims:

A6 Cont'd
15. (New) A recording apparatus comprising:
dot formation means being divided into a plurality of groups, each of the groups for forming a dot in accordance with a predetermined dot formation condition assigned thereto, the dot formation condition related to monochrome recording or color recording;
drive means including a mode fixing circuit, for driving the respective groups in the dot formation means in accordance with record data;

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storage means including storage regions, for storing only the groups used in the dot formation;

control means for expanding record information into an image in the storage means, for transferring record data from the storage means to the drive means and for reserving storage regions in the storage means only for groups used on a present recording; and,

fixing signal output means for outputting a mode fixing signal determining whether the dot is formed, and for transmitting the mode fixing signal directly to the drive means associated with a group in the dot formation means, wherein whether the dot is formed is predetermined by the dot formation condition in the mode fixing circuit.

16. (New) The recording apparatus as set forth in claim 15, further comprising mode fixing means for fixing the dot formation condition of the group in the dot formation means.

17. (New) The recording apparatus as set forth in claim 15, wherein the divided groups of the dot formation means further comprise a color group for forming a plurality colors of dots, a first black group for forming a black dot during monochrome recording and a second black group for forming a black dot during the monochrome recording and the color recording; and wherein the fixing signal output means outputs the mode fixing signal to the first black group during the color recording, and outputs the mode fixing signal to the color group during the monochrome recording.

18. (New) A recording apparatus comprising:

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dot formation means being divided into a plurality of groups for forming a dot in accordance with a predetermined dot formation condition related to monochrome or color recording;

driving means for driving the respective groups in the dot formation means and for determining the formation of the dot by inputting into the dot formation condition a mode fixing signal; and

control means for expanding image in storage means corresponding to the data used for dot formation and for transferring data from storage to drive means;

wherein the divided groups of the dot formation means further comprise a color group for forming a plurality colors of dots, a first black group for forming a black dot during monochrome recording and a second black group for forming a black dot during the monochrome recording and the color recording.

19. (New) The recording apparatus as set forth in claim 18, wherein the mode fixing signal is transmitted to the first black group during the color recording, and the mode fixing signal is transmitted to the color group during the monochrome recording.

20. (New) The recording apparatus as set forth in claim 1, wherein the divided groups of the dot formation means further comprise a color group for forming a plurality colors of dots, a first black group for forming a black dot during monochrome recording and a second black group for forming a black dot during the monochrome recording and the color recording; and wherein the fixing signal output means outputs the mode fixing signal to the first black group during the

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(See end)
~~color recording, and outputs the mode fixing signal to the color group during the monochrome recording.~~